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THE MODERN OPERATION FOR CATARACT, AS MODIFIED BY M. DE WECKER. WITH A PARTIAL TRANSLATION FROM HIS ANNUAL HOSPITAL REPORT.

By HASKET DERBY, M.D., Boston.

SINCE the flap extraction of cataract has been so largely superseded by the peripheric linear method of von Graefe, Dr. Liebreich, of London, has brought prominently forward another operation, which now generally bears his name. He makes a cut throughout in the cornea, curved, about midway between its horizontal meridian and its upper or lower edge, and, having ruptured the capsule, extracts the lens without removing any portion of the iris.

The operation of von Graefe consists, as is well known, in a nearly linear incision at the upper sclero-corneal junction, in the excision of a piece of the iris, and the subsequent extraction of the lens. Dr. de Wecker makes a larger and more curved incision, which, "instead of being linear, forms a small flap two millimètres high." This done he follows, step for step, the method of von Graefe; and may be said to do his operation with a comparatively slight variation as well as equal results. These last words are justified by the following quotation from de Wecker's annual report.

"M. de Wecker's section does not afford, as regards the number of cures obtained, any larger figures than those obtained by the method of von Graefe. In spite of its curve, the section made use of by our master (it is the assistant of de Wecker who writes) allows a coaptation of the lips of the wound as close as that observed in the method of the celebrated ophthalmologist of Berlin, and, like the latter, results, in a great majority of the cases, in a union by first intention and an immediate and total cure, as may be seen by a comparison of the statistics which represent the complete success of the two operators."

The methods of von Graefe and de Wecker belong to the same family and may, for all practical purposes, be considered as the same. The operation of Liebreich is entirely distinct. The lines between these opposing systems are fairly drawn. On the one hand, we have a cataract made to emerge through an artificial pupil and a peripheric linear or curved incision; on the other, an extraction through the

natural contracted pupil and a median corneal cut. The relative advantages of these two methods are now engrossing the attention of ophthalmic surgeons. On the side of Liebreich, most plausible assertions have been made. On that of von Graefe and de Wecker, numerous carefully prepared statistical tables have been compiled, showing a larger percentage of success than has hitherto been known to be attained. Until answering and more favorable figures have been brought forward by the upholders of the new operation, its value must, of course, be considered as undecided.

Meanwhile I desire to present, for the benefit of those interested in such matters, a portion of the excellent annual report* of de Wecker's clinique in Paris, giving his reasons for modifying the peripheric linear extraction, as well as some practical and novel hints regarding preparation for the operation and after treatment.

(Translation.)

The best means to employ in order not to provoke a prolonged irritation of the portion of the ciliary body adjoining the wound, is to keep farther away from it than von Graefe did. Prof. Horner, a particularly experienced and prudent operator, wrote recently to Dr. de Wecker:

"Nothing appears to me to more surely avoid the dangers of healing-in of the iris (irido-cyclitis and even sympathetic iritis, which I have been unfortunate enough to observe twice) *than a less peripheric incision* and the non-use of atropine before the operation; I have no doubt but that your experience has been the same."

Our first care, then, should be to avoid all healing-in of the extremities of the sphincter of the iris at the corner of the two commissures. The iridectomy once performed, every portion of this membrane ought to occupy the same position that it did before the creation of the artificial pupil.

Moreover, numerous observations have proved to us the advantage, alluded to by the Zurich professor, of not dilating the sphincter of the iris before proceeding to extraction. If the instillation of atropine be avoided, it can be seen that this membrane returns much more readily into position after the excision of one of its parts. M. de Wecker, accordingly, makes a more sparing use of this mydriatic. During the year 1871, he began to give it up after the operation in the majority of cases, in order to avoid the irritation of the conjunctiva that comes on in a certain number of individuals.

For nearly a year, all extractions at the clinique have been performed without the previous production of mydriasis. In fact, as has been noted in the foregoing tables, we only use this agent when the aqueous humor is somewhat cloudy, when it contains masses of corticalis, and when the iris threatens to inflame.

* Ophthalmological Clinique of Dr. de Wecker at Paris. Statistics of the operations performed during the year 1872. By Dr. Georges Martin, Chef de Clinique. Paris, Adrien Delahaye.

A combined extraction* is often accused of being a complicated method, and involving for the patient an artificial pupil. But in reality such an operation makes no unreasonable demand on the skill of the surgeon. It is unjust to attribute to an operative method those drawbacks which are not inherent in it, but are solely due to a want of accuracy in the performance.

If a coloboma of the iris interferes with vision, it is in a far smaller proportion of cases than is generally supposed; the majority of patients easily learn, at the end of a certain time, to disregard it by slightly drooping the upper lid.

And, as the escape from the slight inconveniences entailed by a solution of continuity of the fibres of the iris is purchased at the price of several suppurations, no operator should hesitate to choose that method which the interest of the patient demands. It is in establishments like those ruled by M. de Wecker, where hundreds of extractions occur in a year, that the choice of that method that leads most certainly to a cure is most imperatively demanded.

In a simple extraction, the larger portion of the cataractous mass can emerge through the natural pupillary opening, but it is almost impossible for all the cortical layers imprisoned behind the iris to follow the same road. Moreover, setting aside clinical experience, anatomy and mechanics alike demonstrate that a *complete* delivery of the crystalline is only possible by a combined method, unless the cataract be extracted in its capsule, which would be an unhappy reversion to a process considered dangerous, under many circumstances, by nearly all the operators who have employed it.

The present tables give seven entire failures, figures that cause just pain to an operator, even when met with among 217 extractions. How great, however, would have been nearly every week the burden of care if the twenty-two suppurations, that would have resulted from an equal number of extractions by the old flap method, had to be undertaken. Does not, moreover, the surplus of fifteen successes attending the method of curved combined extraction more than compensate for the slight amount of dazzling experienced by a few stray patients?

Remark that the proportion of ten per cent. of failure does not attend flap extraction solely; the new methods without iridectomy, elaborated though they be, lead to an equally inferior result, as the most recent statistics of the method of Weber prove.

Despite all the above-mentioned precautions, the most dexterous operator will always happen on a certain number of patients in whom suppuration is inevitable.

This complication, in very many cases, is impossible to foresee, and cannot find its explanation in a morbid state of the fundus oculi. The most serious affections of the choroid and vitreous humor (pos-

* i. e., extraction prefaced by an iridectomy.

terior staphyloma, disseminate choroiditis, floating bodies in the vitreous, partial detachment of the retina) seem to have no unfavorable influence on immediate accidents, but rather on those which occur after a certain lapse of time.

It is safe to state that the majority of suppurations which occur the second or third day after the operation, are due to an irritation of the conjunctiva.

When the mucous membrane is inflamed, either primarily or in consequence of chronic lachrymation, of slight dacryocystitis, or of blepharitis, the pus corpuscles emigrate towards the lips of the sclero-corneal wound, and the adhesive process is interrupted and fails to induce a union by first intention. In another series of cases, the direct cause eludes observation; the organ is probably the seat of a congestive condition which, stimulated by operative interference, encourages the exit of white blood corpuscles; these latter, placed between the edges of the section, interfere with the developement of the phenomena of cicatrization.

Governed by this theory at the clinique, whenever there is the least reason for fearing a suppuration of the lips of the wound, we have recourse to a remedy which has been adjudged useful in preventing the passage of leucocytes, and incapable of interfering with the phenomena of proliferation. We speak of the chlorhydrate of quinine, recommended by Prof. Nagel several years ago to meet the inflammatory complications experienced by some patients.

If, at the time of the second dressing, which generally takes place twenty-four hours after the operation, the conjunctiva is observed to be the seat of a considerable secretion, the aqueous humor to have lost its transparency, the segment of the cornea adjoining the wound to be invaded by a grayish tint (differing from the opaline color which follows a simple contusion), and if, finally, the conjunctiva presents a slight tumefaction, we prescribe immediately a solution of chlorhydrate of quinine.* The wound is once an hour carefully bathed with this preparation, a certain quantity of which is allowed to trickle down, drop by drop, from a slight distance above it. After this application, a drop of atropine (about gr. i. to ʒ iij.) is instilled between the lids, in contact with which is constantly kept a compress soaked with the solution of quinine. This treatment is only suspended at night, during about six hours. The patient's sleep is favored by the administration of hydrate of chloral in doses of from gr. xxx. to gr. xlv. During this time, unless the suppuration is excessive, the eye is protected by a slightly compressive bandage.

By means of the quinine and the atropine, an eye threatened with panophthalmitis can be saved one time in three, and in nearly every case suppuration can be limited to the cornea. A fact worthy of notice is that the salt of quinine induces a nearly immediate cessation of the acute pain experienced by the patient, and reduces it to a sim-

* R. Quininæ chlorhydrat., gr. vi.;
Aquæ destill., dr. xv. M.

ple sensation of warmth. We see, therefore, that, though the solution of chlorhydrate of quinine does not invariably arrest the disease, it offers the immense advantage of disembarrassing in many cases the loss of the eye, of acute suffering, and of nearly complete atrophy (phthisis) of the operated organ.

As has been demonstrated, this system of medication and the operative process, on which we have so earnestly dwelt, grant an amount of security procured up to to-day by no other method of treatment. This operation allows the surgeon to quit his patient, divested of uneasiness as to the result of the extraction. Entire assurance may be felt when the following principles have been complied with:—

Easy and complete evacuation of the nucleus and corticalis.

Restoration to its position of the internal sphincter of the iris.

Perfect coaptation of the wound as well as of the conjunctival flap.

(End of translation.)

I will add a brief *résumé* of the 217 extractions included in de Wecker's report of this year.

Twenty-five cataracts were not fully ripe. Five patients had diabetes. Vitreous was lost in twelve cases, all of which recovered with a vision of at least $\frac{1}{3}$. Iritis occurred six times. Seven eyes were entirely lost. The percentage of success was thus 96·88. The year previous it was 96·52.

Vision amounted in 19 cases to $\frac{20}{30}$
" 58 " " $\frac{2}{3}$
" 49 " " $\frac{1}{2}$
" 69 " " $\frac{2}{5}$
" 17 " " $\frac{2}{7}$
" 10 " " $\frac{1}{10}$
" 10 " was unrecorded;

these patients having their examination deferred until they should return for the operation on the second eye.

" The figures obtained by testing the vision, joined to those representing the proportion of cure, offer in themselves convincing testimony as to the superiority of extraction by the small peripheric flap, combined with iridectomy, over every other method."*

Such cases give no uncertain sound. Their results challenge comparison, and are not to be met by vague and unsupported laudation of a new and different method. That the pure or modified operation of von Graefe is never to be improved upon, I do not for an instant maintain. But what is claimed to be an improvement upon it must rest, in this day and generation, upon a basis of solid facts, and be known by its fruits.

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* Quotation from Report.

Progress in Medicine.

REPORT ON SURGERY.*

By J. Collins Warren, M.D., Boston.

The Examination of the Pelvic and Abdominal Organs by the Introduction of a portion or the whole of the Hand into the Rectum. By Prof. Gustav Simon, Heidelberg. (*Deutsche Klinik*, No. 46, 16, Nov., 1872.) This was the subject of an address delivered before the Congress of German Surgeons, and was afterwards published in the *Archiv für Klinische Chirurgie*, B. xv., and in the paper above quoted. Prof. Simon has not only undertaken, but has most fully demonstrated the possibility of introducing the whole hand into the rectum, and some of the fingers even into the sigmoid flexure, *without rupturing the fibres of the sphincter or producing an abrasion of the skin at the margin of the anus.* The contractile power of the muscle is usually restored within twelve hours, and there appears to be but little pain or discomfort resulting from these manipulations. The patient, after being chloroformed, is placed either in the position for lithotomy or upon the side, with the knees drawn up to the abdomen. If it is necessary to penetrate high up into the abdominal cavity, the thorax must be bent upon the abdomen in order to shorten, as much as possible, the long diameter of the latter. Complete anæsthesia must be produced, in order to relax as much as possible the sphincter muscle. Before introducing the hand, the rectum must be thoroughly syringed out. The whole hand being freely oiled, two fingers are first introduced, then four, and next the thumb; then, by slow pressure, accompanied by a gentle rotary movement, the whole hand is finally passed through the sphincter into the rectum. Considerable force is necessary in order to accomplish this; and yet, with care, rupture of the skin or the fibres of the muscle may be avoided. In very rare cases, however, it is necessary to cut through the muscle at its posterior border in order to avoid tearing, a cut always healing quite rapidly.

The anus, when stretched to its greatest width, being then about twenty-five centimetres in circumference, is still but a narrow entrance to the roomy cavity of the lower two thirds of the rectum, which fairly fills the lower part of the pelvis. The width of this cavity is from twenty to twenty-five centimetres, but it narrows rapidly at the upper third, so that, when the rectum is distended, a sort of cul de sac is formed at the upper extremity, and it is frequently quite difficult to find the continuation of the gut into the sigmoid flexure. It is not possible to introduce more than four fingers into the sigmoid flexure without rupture of the intestine. The narrowness of the intestine is not the only obstacle to further progress, but the peritoneal ligaments, which surround the upper portion of the space of Douglas, effectually prevent the passage of the hand. With the fingers in the sigmoid flexure, it is possible to reach a few centimetres above the umbilicus and to touch the whole anterior abdominal wall on both sides below this point. If the upper part of the rectum prove unusually narrow, we can press with the fingers the middle portion into and through the

* Second semi-annual Report.

upper border of the space of Douglas, thereby inverting it. This enables the examiner to reach the integuments somewhere between the umbilicus and pubes. By this method, it is possible to reach at least fifteen centimetres further into the abdominal cavity than by any previous method of examination. Moreover, the fingers are separated from the part to be examined only by the thin intestinal wall instead of the thick and unyielding walls of the abdomen. This method of examination is adapted to all important cases, when other methods have failed to satisfactorily determine the diagnosis. It can be employed without disadvantage immediately before a surgical operation. The character of diseases of the intestines as far as the sigmoid flexure, and of disease of the pelvic organs, are more readily determined by this than by the old method. Also all tumors existing in the lower half of the abdominal cavity. The readiness with which any change in the diameters of the pelvis can be determined, makes it especially advantageous in midwifery. The plan of many surgical operations might be materially changed; for instance, strangulated hernia might be reduced by traction from within, foreign bodies could readily be removed from the rectum by the hand alone. Prof. Simon enucleated a fibrous tumor of the uterus and pushed it up into the abdominal cavity; and had it been necessary to extirpate it, it could easily have been pressed firmly against the abdominal walls. In order to show how slight the disturbance is after such an examination, we quote the last paragraph of this interesting article:—

"A number of physicians lately visited Heidelberg in order to learn this method of examination. Five patients were submitted to them for this purpose, two with vaginal fistulæ (one of whom had deformity of the pelvis), one with carcinoma and one with fibroma of the uterus, and, finally, one with an ovarian tumor. Each patient was examined at least three times, and three of them five times, and that, too, by men whose hands measured from twenty-five to twenty-six centimetres. The rules given above having been carefully observed, that is, on gradual pressure with the hand well oiled, the skin was torn only in one case, and in that very superficially. After the examination, the patients suffered no discomfort beyond nausea from the chloroform, not even the slightest pain in the abdomen, and the next day continence was so completely restored that an injection of water into the rectum was retained."

The Antiseptic Method in Surgical Dressings.—We presume that it is very generally considered, in this country, that the antiseptic system of Lister has been virtually abandoned, and that, with the exception of the employment of certain so-called antiseptic lotions and applications, no further attempt is now made to prevent decomposition taking place in the fluids collecting upon wounded surfaces. Indeed, the system has, with the exception of rare instances, not been thought worthy of a fair trial. We doubt if there has been a single surgeon of any prominence in this country who has undertaken to do it this justice, and yet when we read the testimony of not one man alone, but of numerous observers in England, Germany and elsewhere, as to the results that have been obtained by a careful observance of the details necessary to preserve a wound in a perfectly antiseptic condition, it is hard to believe that such a system must be considered entirely impracticable and worthless. We have before us

a copy of a lecture delivered at a meeting of the Military Medical Society of Berlin (*Volkmann's Klinischer Vorträge*, No. 52) by A. W. Schultze. This surgeon, having witnessed the effects of attempts at this form of treatment in the Charité Hospital, visited Lister's wards, and gives, in his lecture, the result of his observations of this treatment in England. It is absolutely necessary, he says, to have a correct idea of the theory on which this treatment is based in order to be able to carry it out properly.

"The antiseptic treatment of Lister does not consist simply in the use of an antiseptic; it is not merely a disinfecting treatment, but, as Lister himself distinctly states, 'a treatment which has the effect of preventing the occurrence of decomposition in the parts.' Lister's theory is, that an unfavorable state of the wound is caused by an abnormal condition of its secretions, a condition which is brought about by elements that are introduced into the wound from without. Lister's plan has simply for its object to prevent the action of these injurious agencies."

Without going any further into the theoretical part of this subject, for which we refer the reader to the lecture quoted, and also to a lecture published by Lister in the *British Medical Journal* of August 26th, 1871, we will state briefly the system as at present carried out at Edinburgh, as given us in Dr. Schultze's account.

During an operation, all access of dust or organisms to a wound is prevented by employing an atomizer, which keeps the parts enveloped in the spray of a solution of one part carbolic acid to one hundred water. The solution is used as weak as possible, so as to produce a small amount of irritation, and yet be strong enough to destroy all organisms with which it comes in contact. Lister prefers to employ this in the form of spray at the time of the operation rather to wash the wound out with it afterwards, which latter, however, is thought sufficiently protective by those who otherwise carry out his system very carefully. The antiseptic catgut ligature is used for securing the arteries, while the spray plays over the wound. The "catgut" employed is taken from the intestine of the sheep, and is steeped for a couple of months in a solution of one part carbolic acid, five parts water and five parts oil. This prevents swelling and softening of its substance when subjected to the action of fluids. The ends of the ligatures are cut short and are left to be absorbed, "organized," disintegrated, or to whatever changes they may chance to be subjected. Experience shows that they do their work properly, even when applied to the largest vessels, and cause no irritation by their presence. The catgut is not adapted for sutures which are subjected to tension, in consequence of which the catgut becomes softened and stretched. Carbolized silk is therefore used for this purpose. White silk is dipped into a solution of melted wax mixed with one tenth the amount of carbolic acid. As the wound has been irritated somewhat by the carbolic spray, there is naturally an increased secretion. To prevent any tension, a small piece of drainage tube is inserted at one end of the wound to enable these fluids to be discharged. The wound is now covered with some unirritating substance of sufficient density to prevent the penetration of vapor of carbolic acid from the dressings which are placed outside of it. Oiled silk, varnished with copal varnish, was found to serve this purpose. This protective covering, he says, should be perfectly bland

and unstimulating in its own substance, and also quite impermeable to the antiseptic. Above this protection the dressing is applied, which is intended to prevent the entrance of septic substances. For this purpose, the antiseptic gauze is used. This Lister describes as "a loose cotton fabric, the fibres of which are impregnated with carbolic acid securely lodged in insoluble resin, which holds the carbolic acid with remarkable tenacity, while at the same time a little paraffin is added, to prevent the adhesiveness which the mixture of carbolic acid and resin would otherwise possess." Resin five parts, paraffin seven parts, crystallized carbolic acid one part. This gauze is folded into eight thicknesses, and cut large enough to overlap the wound a hand's breadth in every direction. Inasmuch as the secretions of the wound find their way readily through the meshes of this dressing, a piece of waterproof Macintosh is placed beneath the outermost layer of the gauze, and the fluids are obliged to pass beneath the entire extent of the covering before coming in contact with the air. This dressing is held firmly against the wound by bandages of the same gauze.

The dressing is allowed to remain on for two or three days, according to the amount of secretion. When the dressing is changed, the wound is subjected to the spray, or a piece of linen compress soaked in a weak solution of the acid is placed over the wound until the new dressing is applied.

Schultze is convinced that nothing but a careful observance of all the details laid down by Lister can be looked upon as antiseptic treatment. In regard to the results of this treatment, Lister's mortality, after amputations, has greatly diminished. In Glasgow, before the antiseptic period, he had 16 deaths in 35 cases—during this period, 6 deaths in 40 cases. In his two years of service, at the Edinburgh Infirmary, he had not a single case of pyæmia, gangrene or erysipelas, although Simpson's statistics (*Lancet*, Nov. 2, 1867) show very unfavorable results for these wards in 1864–65. The building is old and badly ventilated. Lister's method is pretty generally adopted in Edinburgh. It also has supporters in Glasgow and Dublin, but not in London. The catgut ligature, however, is very generally considered in Great Britain a great improvement. In Liverpool, Bickersteth, a follower of Lister's plan, has used the catgut on the external iliac, and on the carotid successfully. In Manchester, Dr. Schultze saw in Lund's wards, where this system is adopted, a Syme's amputation healed without suppuration, a hip joint healed by first intention with the exception of a very small fistulous opening, also an amputation at the shoulder joint and of the thigh healing in the most satisfactory manner.

A correspondent from Paris writes us that Guérin's cotton wool has superseded every other kind of antiseptic dressing in that city. He says, "It looks very shocking to the surgical eye, but the results are good here; the application is not easy, and if badly executed, the result of the dressing is very bad. If you have a case of hand badly mangled by machinery, try cotton wool. Remember Guérin's rule—*il faut mettre trop d'ouate et il faut serrer trop fort.* Leave the dressing on a fortnight or three weeks, and then use simple dressings."

It may be remembered that at one time Lister tried cotton wool, which had been subjected to the vapor of antiseptic substances, recognizing its power to act as a filter to the air dust, as shown in Tyndall's experiments, but afterwards abandoned it.

In this connection, it may be of interest to allude to some experiments by J. Rosenbach, on the influence of carbolic acid as a preventive against putrid and pyæmic infection in animals (*Allgemeine Medicinische Central. Zeitung*, Feb. 15th, 1873). This experimenter injected subcutaneously into dogs and rabbits pus alone, or in combination with carbolic acid. Fresh, laudable pus, when injected in sufficient quantity, produced phlegmonous inflammation, general malaise and increase of temperature of several days standing, and finally, in most cases, death. The addition of five per cent. carbolic acid, to the same kind of pus, producing a flocculent coagulation, resulted in the formation of an abscess without constitutional symptoms. An addition of only one-fourth per cent. carbolic acid was without effect. If one per cent. was added, in many cases there was an effect upon the pyrogenous (fever producing) action of the pus.

Reports of Medical Societies.

THE BOSTON SOCIETY OF MEDICAL SCIENCES. E. WIGGLESWORTH, JR. M.D., SECRETARY.

NOV. 26th, 1872.—*Rhus Venenata and Rhus Toxicodendron.*—Dr. White read a paper upon the poison of rhus venenata and rhus toxicodendron, and exhibited in this connection a large number of fine illustrations of the appearance of these and kindred plants. In reply to questions, Dr. White stated that the chemical nature of the first poison was unknown; that blackwash modified the appearances and shortened the duration of symptoms; that there was no periodicity of return, but that attacks of eczema often occurred subsequently at irregular intervals.

Lymph Spaces in Fasciæ.—Dr. H. P. Bowditch then spoke of the lymph spaces existing between the tendinous fibres of fasciæ, and the connection of these spaces with lymphatic vessels, citing Ludwig, Schweigger Seidel and Dr. Genersich, the researches of the last of whom have shown that the fascia, in virtue of this structure, plays a very important part in keeping up the flow of lymph through the lymphatic vessels. Various experiments were described going to prove that passive movement of the limbs, and, to a less degree, galvanization of the muscles, increased this flow, which in some measure accounts for the success of methods of treatment like the Swedish movement cure. For the injection of lymph spaces, Dr. Bowditch preferred the turpentine solution of alkanine, as watery or alcoholic fluids tend to produce swelling or shrinking of the tissues. The injection should be made in several places, with a hypodermic syringe inserted obliquely into fascia, carefully cleaned and stretched over the neck of a bottle, near the border. Extravasations ensue, which have dispersed themselves throughout the finest lymph-spaces when the fascia, unremoved, has become dry. In this way, two, or even three, layers of lymph spaces, lying between as many different layers of tendinous fibres, may be clearly demonstrated. The dried fascia may be mounted in Canada balsam, between glass plates.

In answer to Drs. Fitz and White, Dr. Bowditch stated that fine injections into the small vessels of the brain would pass from the veins into the lymph vessels.

Portable Microscope for the Lecture Room.—Dr. White exhibited some microscopes, arranged by him for passing from hand to hand during a lecture; instead of a stand, the slide being adjusted to the frame and thoroughly screwed down. The coarse adjustment was made with the tube as in all Nachet's microscopes. The fine was made by means of a collar, and twisting the tube slightly. By means of these microscopes, time is saved, and points are shown while being described.

Cornea prepared with Gold.—Dr. Quincy showed some specimens of a cornea from a rabbit, they having been covered with gold, according to Klein's method. Dr. Dwight alluded to the beaded appearances of the finest nerves, well shown in the specimens. He had been for some years conversant with these appearances, and had attributed them to an unequal precipitation of the gold. Dr. Amory inquired if these were a constant phenomenon.

Dr. Dwight said no, but that they were found at times in the smallest nerves.

Dr. Bowditch thought that they were, perhaps, the same as described by Max Schultze in the ultimate fibres of the axis-cylinder.

JAN. 28th, 1873.—*Vegetable Parasites.*—Dr. White showed, under the microscope, some hairs from a patch of tinea tonsurans, some three inches in diameter, upon the head of a young girl. Also some stumps of hairs, about one eighth of an inch in length, from around the periphery of a wholly bald patch with a healthy surface, upon the back of the head of a young man seen to-day for the first time; the patch, some two inches in diameter, having been noticed a fortnight since and having increased during that time by one quarter of an inch. The free ends of the stumps were splintered, but at the extreme end there existed upon every hair a dark looking cloud composed of minute cells resembling spores of a fungus. Dr. White had never seen fat globules in this position, and not elsewhere as well. The appearances resemble what, in three or four cases, he had found in alopecia areata. The general appearance, also, of the disease in this case was that of an alopecia areata, except, as regards these few hairs in the periphery, where it would seem as if the fungus acted higher up. He believed that in the majority of cases alopecia areata is not parasitical, but that in others it is.

Dr. Edes thought that this would make two clinical diseases.

Dr. White considered them alike externally and clinically, though pathologically two diseases.

Dr. Bowditch asked if the presence of spores here might not be accidental.

Dr. White said that the appearances here varied from those of other spores, and yet were alike in cases where they were found.

Dr. Bowditch inquired if the development might not depend upon varying conditions.

Dr. White responded that he did not lay the same stress upon soil which some authors do; that Dr. Bowditch's remarks would apply, also, to other parasitic diseases.

Dr. Fitz asked if the fraying out might not be anterior to the development of spores.

Dr. White stated that the ends of hairs are found broken in other diseases, but not in this way. He considered the outlines here as distinct as is usually the case, and added that the young man had worn,

for the last two months, the hat of a friend of whom nothing is known.

Ruptured Membrana Tympani and Perception of high Tones.—Dr. Blake spoke of the case of a young man twenty-five years of age, a student of natural history, who had always heard high tones better than low ones. Two years ago, while practising with a blow-gun, he heard a crack in the left ear which was repeated on a second attempt at blowing. Six months later, he had the same experience without any change in hearing. Six weeks ago, he was exposed to cold and wet, and had some inflammation and congestion of the pharynx, and was awakened at night by a loud throb in the left ear, similar to that experienced when using the blow-gun. An examination showed the post. sup. portion of the membrana tympani to be abnormally thin, the dentritic fibrous tissue described by Gruber being apparently wanting. In the left membrana tympani, this thin membrane had been ruptured by the force employed in shooting with the blow-gun, and the torn edges were united to the descending process of the incus. During the trouble in the throat, the change of atmospheric pressure in the middle ear, caused by swallowing, moved the membrana tympani, and, on the left side, the descending process of the incus attached to it, and by this movement communicated directly to the stapes, so varied the intra-labyrinthine pressure as to awaken the patient with the sensation of a blow upon the head. In the left ear, tones as high as 53,000 vibrations were distinctly heard, the vibrations being conveyed directly from the membrana tympani to the incus, this observation being confirmatory of some experiments previously reported.

FEB. 25th.—*Relative size of Blood Globules in Man and in the Horse.*—Dr. H. P. Bowditch had moistened blood stains with a saturated solution of KO, A, and the diameters of the blood globules, in divisions of the eye-piece micrometer, were as follows:—

Dried ten days on glass.		Dried three to four weeks on wood.	
Horse.	Man.	Horse.	Man.
4	5·5	5	5·5
5	5·5	4	5·5
5	5·5	5	6
5	5·5	4·5	5·5
5	5·5	4	7
5	6		6
4			7
5			
5			
5			
Mean 4·83	5·58	Mean 4·5	6
or ·0063 mm.	or ·0072 mm.	or ·0058 mm.	or ·0077 mm.

The mean diameter of fresh globules of horse = ·0057 mm.; of man = ·0077 mm. according to authorities; though these differ in their statements of the extent of variation in size of the red blood globules of each *inter se*. The truth probably is, that a very large proportion [perhaps 99 per cent.] do not vary perceptibly, but, by careful search, globules may be found varying as much one third above and below the mean. In this connection, Dr. Bowditch spoke of the need of trustworthy medical-expert testimony.

Bibliographical Notices.

Text-book of Physiology, General, Special and Practical. By JOHN HUGHES BENNETT, M.D., F.R.S. etc. Philadelphia: J. B. Lippincott. 1873. Pp. 606. Small 8vo.

THE leading idea pervading this volume, and distinguishing it from other physiological text-books, is the law or generalization of the author, "that the development and growth of organic tissues are owing to the successive formation of histogenetic and histolytic molecules." In other words, the tissues of the body existing at any one time are built up from the molecular débris of previously existing tissues, and in their turn furnish, by their disintegration, a molecular material from which other tissues may be formed. This process is illustrated by a series of figures, representing different stages in the development of the ascaris mystax, where molecular re-arrangements seem to play the principal part.

True to this theory of the molecular origin of the tissues, the author regards pus cells as originating "in the molecular matter of exudations from the blood-vessels." He rejects entirely Virchow's theory of the origin of pus from connective tissue corpuscles, stating that he has never seen a single specimen of inflamed tissue, recent or prepared, in which such an occurrence could be demonstrated, and that German pathologists, firm believers in Virchow's views, have repeatedly failed in their efforts to bring before him microscopic evidence of this mode of pus-formation. The observations of Cohnheim and others on the emigration of white globules of the blood are barely referred to and passed by with the statement that the phenomenon, though carefully looked for by the author and his assistants, has never been observed. In accordance with this same theory, the author ranges himself fairly among the believers in spontaneous generation, even going so far as to describe with some minuteness the nature of the process. He regards the infusoria, vegetable and animal, found in organic fluids during fermentation and putrefaction, as originating "in oleo-albuminous molecules, which are formed in organic fluids, and which, floating to the surface, form the pellicle or proligerous matter. There, under the influence of certain conditions, such as temperature, light, chemical exchanges, density, pressure, and composition of the air and of the fluid, &c., the molecules, by their coalescence, produce the lower forms of vegetable and animal life."

The application of this molecular theory to the phenomena of disease leads the author much farther into the domain of pathology than writers of physiological text-books usually care to venture.

The merit of the work is very unequal in its different parts. Many portions, especially those which have a bearing upon the favorite theory of the author, are clearly and accurately written, while other portions abound in the grossest inaccuracies and give evidence of strange ignorance of the results of modern investigations.

We find, for instance, in the first part of the volume a very good account of the experiments of Rainey and others, showing how cell-like bodies may be formed from inorganic materials. The description of the phenomena of parthenogenesis is also exceedingly good. As well

written portions of the book, may also be mentioned the history of the discovery of animal electricity, and the account of the experiments of the Edinburgh committee of the British Medical Association to determine the effect of mercury on the secretion of the bile.

On the other hand we find the subject of animal heat treated in a very unsatisfactory manner. Only two and a half pages are devoted to the question, and no allusion is made to the important part played by the muscles in the production of heat.

In the portion of the work devoted to histology, the singular division of the elements of the tissues into molecular, cellular, fibrous and tubular, leads the author to classify and describe together such totally distinct structures as the dental tubes and the blood tubes. Such a classification can of course only lead to confusion.

As an example of the inaccuracy of statement, which marks certain portions of the work, the description of the chemical composition of muscle may be mentioned. Here we find Prof. Kühne quoted as authority for the statement that "the semifluid, contractile substance of muscle, when isolated from sarcolemma divides into a fluid portion, termed muscle-serum, and a solid coagulum, termed muscle clot or myosin." It is also stated in this connection that muscle-serum contains a form of albumen which coagulates at 30° C., and that the heart is the only muscle which contains inosite.

In the description of the nervous system, the author proposes a strange innovation in the nomenclature. He applies the term "spinal cord" to all those parts of the cerebro-spinal axis which are situated below the corpus callosum, including therefore the corpora striata, optic thalami, corpora quadrigemina, cerebellum, pons Varolii, medulla oblongata and medulla spinalis. "In this way we have a cranial and a vertebral portion of the spinal cord." No reasons are given for the proposed change, and it is hard to see what good would result to offset the confusion which would inevitably follow the disturbance of a long established nomenclature.

An important feature of the work before us is the portion which treats of practical physiology. This is of interest as indicating the practical way in which physiology is taught in the University of Edinburgh. In the first section, devoted to practical chemical physiology, we find a description of methods of analyzing the various tissues of the body, but look in vain for any experiments on the chemistry of digestion, which might very properly have found a place here. It is very satisfactory to notice that, in this portion of the book, the French system of weights and measures is adopted. This is probably to be explained by the fact that this section was written by the author's assistant Dr. McKendrick. In the main body of the book, the English weights and measures are constantly used. We even find a table giving the weight of the human body at different ages in stones and pounds, on the same page with a statement by the author that the *gramme* is the unit of weight now employed by scientific men.

The section on practical histological physiology gives an account of the construction of the microscope and the method of using it, as well as various modes of injecting, staining and preserving the tissues. Here the author takes occasion to extol the small and convenient microscopes of the continental makers, at the expense of the bulky and clumsy contrivances of the English manufacturers.

In the section on practical experimental physiology, also written by Dr. McKendrick, we have, in the words of a recent reviewer in the *British Medical Journal*, rather a descriptive catalogu e of physiological apparatus than a treatise on experimental physiology. It is, however, a recognition of the fact that physiology is an experimental science, and one to be studied and taught in the same way with chemistry and physics. The introduction of a chapter of this sort into a physiological text-book is therefore an important step in the right direction.

The plates of this volume are twenty-one in number, and have on an average some twenty figures on each plate. Crowding and confusion are of course the result of trying to compress so much into a small space.

On the whole, this text-book, being the work of a teacher of considerable experience, and of an original investigator of no small ability, is a decidedly readable work. Many portions of it may be perused to great advantage by the advanced student of physiology. On the other hand, the bias of the author in favor of a particular theory, his apparent ignorance of many important recent investigations, and a too great readiness to accept as conclusive isolated observations of unreliable investigators, render the book unfit to be placed in the hands of beginners. H. P. B.

Practical Histology in Vienna, and the Microscopical Study of Blood and Epithelium. By JAMES TYSON, M.D. (Reprinted from the *Philadelphia Medical Times.)* Philadelphia: J. B. Lippincott & Co. 1873. Pp. 34.

Dr. TYSON gave the results of a portion of his experience in Europe to his friends of the Philadelphia Academy of Natural Sciences, and kindly allows a wider circulation to his communication through this brochure. The style is very much that which might be found in a letter from a friend interested in and at work upon the subjects spoken of. The manner and means of isolating the elements of the various tissues are clearly and concisely given, the points to be investigated are indicated, and the questions to be asked are anticipated. The beginner is told what to do, not what he may do, the reverse of the directions found in so many of the usual text-books. It would be difficult to find elsewhere such a simple statement of what can be done by any and all who may possess even a slight active interest in the subject of histology.

BOOKS AND PAMPHLETS RECEIVED.

The Mineral Springs of the United States and Canada, with Analyses and Notes on the prominent Spas of Europe and a list of Sea-side Resorts. By Geo. E. Walton, M.D. New York: D. Appleton & Co. 1873. Pp. 390. (From A. Williams & Co.)

The American Chemist for May. Published by Henry A. Lea. (From A. Williams & Co.)

Seventeenth Annual Report of the Births, Marriages and Deaths in the City of Providence for the year 1872. Pp. 63.

Normal Ovariotomy. By Robert Battey, M.D. From the *Atlanta Medical and Surgical Journal*, 1873. Pp. 42.

Ninth Annual Report of the Overseers of the Poor of the City of Boston for the Financial Year 1872–73. Boston. 1873. Pp. 34.

Boston Medical and Surgical Journal.

Boston: Thursday, June 19, 1873.

THE SUCCESS OF THE HARVARD MEDICAL SCHOOL.

All friends of progress in medical education will be glad to read the following extract from President Eliot's speech at the annual dinner of the Massachusetts Medical Society :—

"Two years ago, in this place, the University asked the approbation and support of this old and vigorous Society in an attempt to reform medical education. The University has had your cordial support; the revolution is two-thirds accomplished; and, instead of hopes and promising plans, I can now bring you thanks and the assurance of complete success in a much shorter time than the friends of the undertaking had dared to hope. The Harvard scheme of medical instruction has commended itself to the reason and the experience of the whole medical profession. There has been but one voice, and that has been of approbation and encouragement. A few professors in other medical colleges have indeed declared with unfeigned sorrow their belief that the Harvard school must fail to secure the pecuniary success which its educational policy deserves. Some have thought that it would have been wiser to wait for a large endowment before attempting to improve the prevailing system of medical training. Gentlemen, that supposed necessity for pecuniary success is just what has brought American medical schools to their present disgraceful and appalling condition. The Harvard Medical School does not propose to be judged by that standard. There is not a place of liberal or professional instruction in the world worth preserving, which would consent to have its work and worth estimated by its balance-sheet. If the American medical school is to be a commercial speculation first, and a place of liberal training afterwards, then the pecuniary argument is the fundamental one. Otherwise the profession may reasonably call upon the faculties of all medical schools, in the first place, to teach as well as they know how and upon that general plan which commends itself to their deliberate judgment, leaving to the second place all question of pecuniary profit or loss. It must be observed, also, that all question of the money success of the Harvard plan would be at once set at rest if other medical schools ceased to offer cheap and easy access to the medical profession. As to waiting for an endowment, the faculty of our medical school thought that the first step towards getting an endowment was to deserve one. As you might perhaps infer from what has been said that our experiment is not succeeding in a pecuniary sense, I beg to add that the corporation has been more than satisfied with the result so far, and expects within two years to find the income of the school larger than it has ever been, and this for the very simple reason that under the new system one student for the whole course is as good as two under the old. The strength of the school as a place of teaching depends, of course, upon the quality

and number of its teachers. I need not tell you, gentlemen, that the school has never had a stronger faculty than now, whether as regards numbers or professional eminence; they are thoroughly devoted to their work, and enthusiastically united in the determination to carry to a successful issue the reform which they planned and dared to undertake."

The following letter, which we re-print from the *Philadelphia Medical Times* of May 31st, gives a number of the details which show how unfounded are fears of the result. It will not be long before all schools pretending to high standing will be forced, in self defence, to follow the suggestion in the last sentence of Dr. Ellis's letter.

HARVARD UNIVERSITY MEDICAL SCHOOL,
Boston, Massachusetts, May 14, 1873.

To the Editor of the Philadelphia Medical Times:

DEAR SIR,—My attention has been called to an editorial in the *Philadelphia Medical Times* of March 22, 1873, in which the following passages occur:—"The managers of the Medical Department of Harvard University are trying, *we should to like to believe with satisfactory prospects*, a system of teaching radically different from that of any other school, at least in this country. . . . . And yet there is one important element—the financial—which threatens to fatally affect the success of the Harvard School." Then Prof. Stillé is quoted as saying, "One institution, to its honor let it be spoken, has re-formed its whole plan of teaching upon the model which reason and experience agree in approving as the best. *Much as I desire in this instance to be a false prophet, I have little fear of meeting with the fate of one, when I declare with unfeigned sorrow my conviction that the Medical Department of Harvard University, which has so heroically undertaken so difficult a task without providing endowments for its professors' chairs, must of necessity fail to secure the success which its liberal policy deserves.*"

Both these writers warmly approve the new system of the Harvard Medical School, and both prophesy, while they lament, its failure. The last annual report of President Eliot furnished materials for a more hopeful view, which might have mitigated Professor Stillé's sorrow. On referring to Dr. Stillé's published address, a foot-note showed that the report mentioned had been consulted by him, but that the facts therein stated had been overlooked or misinterpreted.

A statement which had proved most encouraging to those immediately concerned, had actually been used to strengthen the gloomy foreboding excited by the action of the Harvard Medical School.

We are informed that "immediately on the adoption of the new system of instruction the number of medical students fell from 301 in 1870–71 to 203 in 1871–72. The Catalogue of the Medical Department from 1872 to 1873 gives the names of 170 students. Under the new system, therefore, the classes have thus far progressively diminished. The receipts have fallen off in the same proportion, and the professors have nearly twice as much work to do, with a remuneration only half as great as they formerly received.

"The result of this arrangement must necessarily be to compel men of real eminence to withdraw from professorships which are so meanly salaried, and to substitute for them young and immature teachers,

who will regard their position in the medical college as a passport to reputation and practice, and who are willing to purchase the result by a few years of unrecompensed labor. By this plan the traditions of university education are set at naught, its dignity compromised, and its authority impaired. If any profession requires in its teachers the weight of character which maturity of intellect and ripe experience give, it is certainly the medical; but a plan which virtually excludes such qualifications by refusing to compensate them is too much in opposition to human nature and experience to succeed."

Now, let us look at the facts upon which these statements are based. President Eliot says:—

"It having been granted on all hands that these changes were excellent and desirable in themselves, the only ground on which they could be opposed was that they were not feasible, in view of the fact that the entire endowment of the Medical School is only $40,000. The comparison, therefore, of the current receipts and expenses of the years 1870–71 under the old system with those of the year 1871–72 under the new system is of particular interest:—

1870–71.	
RECEIPTS.	
Total receipts from students	$27,717 67
Interest on funds (Hersey, Jackson, Shattuck)	2,779 00
	$30,496 67
PAYMENTS.	
For instruction (salaries)	$19,476 82
For janitor and general expenses	10,039 31
	29,516 13
1871–72.	
RECEIPTS.	
Total receipts from students	$24,104 59
Interest from funds (Hersey, Jackson, Shattuck)	3,404 62
	$27,509 21
PAYMENTS.	
For instruction (salaries)	$20,019 56
For janitor and general expenses	8,877 44
	$28,897 00

"The number of students in 1870–71 was 301, while in 1871–72 it was only 203. Yet the receipts from students were only $3,600 less in 1871–72 than in 1870–71. Many of the students present in 1871–72 were under the old system, and a considerable portion of these were entitled to gratuitous instruction, under the former rule that students paid nothing for the third year of attendance. The fact is that 150 students present during the year under the new plan would give a considerably larger revenue to the school than 300 did under the old. The corporation *paid rather more* for salaries in 1871–72 than was used for that purpose in 1870–71; but the sum appropriated for salaries was differently distributed. Excluding all items from both sides of the account which were not items of current receipt or expenditure, the deficit for the year 1871–72 was $1,387.79.

"The corporation had expected a much larger diminution of receipts from students in the first year of the new system, and were more than satisfied with the actual money result."

Let us now compare the deductions of Prof. Stillé with the facts presented in this clear exposition of the condition of the school. The following distinct points are made by the Professor:

1. Under the new system the classes have thus far progressively diminished.
2. The receipts have fallen off in the same proportion.
3. The Professors have nearly twice as much work to do.
4. The remuneration is only one-half as great as that which they formerly received.
5. The necessary withdrawal of these underpaid Professors, and a great variety of consequent evils.

We will now consider these points seriatim.

In regard to the diminution of the number of students, we must admit the fact, but this has been much less than was anticipated. But this diminution has no bearing whatever upon the main question, which is whether the number of students who join the school under the new plan is increasing or diminishing. The following facts show a constant increase. The first students under the new plan were drawn from the ranks of those who entered under the old. These voluntarily subjected themselves in June, 1871, to the written examinations, as evidence of their appreciation of the change. At the opening of the school in the fall of 1871 a much larger number of new students presented themselves, and in September, 1872, there was still a very marked increase above the number of the preceding year. These statements relate to the first terms of the two years corresponding in time with the old courses of lectures. A still more satisfactory result is seen when we compare the attendance during the second terms, this being the real test of the willingness of students to accept an annual course, which is one of the distinguishing features of this school.

The number of students in the second term of 1872 was ninety-six, of whom twenty-one received gratuitous instruction, in accordance with an old custom to the benefits of which they were entitled. In the second term of 1873 the number rose to one hundred and thirteen, of whom only six were free, and these were sons or assistants of professors. The number not only exceeded that of the corresponding period of the preceding year, but was much larger than that of any class in the summer under the old plan, although then some students joined for a single month, and now all must take the entire term.

The *second* point was that the receipts had fallen off in the same proportion as the students. The latter, according to the figures, had diminished from 301 to 203, or 33 per cent. Mr. Eliot's figures show that the receipts had fallen off 15 per cent. This term *the receipts have exceeded those of the corresponding term of last year.*

The *third* assertion, that the Professors have nearly twice as much work to do, we are glad to say is true in some important departments, to which sufficient time had not been given by the old system. The quantity of teaching has been largely increased; but this increase has been effected mainly by adding to the number of teachers. The Professors whose work has been increased have gladly given the additional time.

The *fourth* statement, that the remuneration was only one-half as great as before, notwithstanding the increase of work, is certainly not derived from the report, as that document states explicitly that *more was paid for salaries than in the previous year.*

Some changes were made in the distribution of this sum, according to the amount of instruction given by the different teachers.

In regard to the *fifth* point, its prophetic character of course makes a final answer impossible at present. It can only be said that up to the present time no Professor has resigned who had not announced his intention to do so before any change was thought of, and every one acquainted with the present composition of the Faculty will admit that it was never stronger than now in professional reputation, and it was never so numerous, so united, or so well satisfied with its work.

The kind of gloomy though pitying prophecy in which Dr. Stillé and the writer in the *Philadelphia Medical Times* indulge is simply one of the natural obstacles which the new system has to overcome. The Harvard Medical School has overcome much more serious obstacles already in contriving and carrying out for two years this great reform in medical education, and has the best prospects of speedy success, in spite of the competition of all the principal schools in the country, which continue to offer medical degrees on the old easier conditions. If five or six of the other leading medical schools in this country would join the Harvard School in making the changes in the system of medical instruction which Dr. Stillé and all other intelligent physicians who honor their profession admit to be desirable, there would be no question in any one's mind about the success of the reform.

Yours truly, C. Ellis, M.D.,
Dean of the Medical Faculty of Harvard University.

The Leprosy of the Bible. By A. Dunbar Walker, M.D.—The leprosy of the Bible has always been a vexed question, and in the present day seems no nearer solution than before. That the "creatures" (for, really, persons without hands and feet, wanting the greater part of the nose, with voices reduced to little else than a croak, and whose existence is a burden to themselves and their friends, are little above creatures) who meet one at the gates of a Syrian town in the present day are the lepers of Scripture, is generally disallowed; for the disease is not contagious, commences quite differently, and produces a disease in no particular resembling that recorded in Leviticus. Elephantiasis Græcorum, also, as seen in the East, is hereditary, which is not recorded about the leprosy of old. Hebra, in a note to his article on scabies, in his comprehensive and learned work on skin-diseases, has suggested that scabies was the leprosy of the Israelites, adducing in its favor—1, the contagious character of the disease; 2, the cure employed in Naaman's case—washing in the Jordan, a river whose water contains sulphur. In analysis of the Jordan water, sulphur is found, but certainly not in sufficient quantity to remove scabies by "washing seven times." The amount of sulphur in solution varies according to the place from which the water is taken: if near the source, it is in small quantities; and there is no doubt that it was near the commencement of the river that Naaman washed, for it is this part that lies on the road to Damascus. The most convincing circumstance, to my mind, that scabies was not the disease, is its rarity in Syria in the present day. In a year's experience of all kinds of diseases in Syria, amongst which were many cases of skin-diseases, no case of scabies presented itself to my notice.

Mr. Balmanno Squire has put forth in the Journal the idea entertained by many, that psoriasis presents many of the features recorded in Scripture regarding leprosy, supporting his theory by its frequency amongst English Jews and Asiatics. Of the greater frequency of psoriasis amongst Orientals, and more especially amongst Syrians, my experience in Syria is quite confirmatory; for amongst the Arabs I saw many cases, and more in proportion to the number of inhabitants than in England. But at the same time, of northern and western nations, removed far from Asiatic influence or blood, Norway affords as many cases of psoriasis, in proportion to its inhabitants, as Syria; and we find in this country elephantiasis Græcorum cropping up. Psoriasis is also a non-infectious disease, which was a character that preëminently distinguished the ancient leprosy. My own comparison of the Scriptural disease, with diseases now known in Syria or any other country, has brought me to think that the leprosy of the Israelites has entirely disappeared; and that, when in existence, it depended on some fungus which attached itself to the hairs of man and animals, producing a crust similar to favus, only of a white color, for we find it producing its effects not only in men, but on the skins of animals worn as garments, and on the walls of the houses.—*British Med. Jour.*

Transmission of Cholera to Animals.—Dr. Leo Popoff has published (*Berliner Klin. Wochensch.*, Aug. 12, 1872) a series of experiments performed upon dogs with the idea of demonstrating the possibility of inoculating these animals by means of cholera-excrementa. He first carefully observed the effect of introducing putrid animal matter into the blood, and then demonstrated how these lesions differ from the characteristic symptoms of cholera in the dog. This difference is most striking in the *post-mortem* changes, consisting in hæmorrhagic inflammation of the stomach and intestines, and ulcerations of the lymphatic glandular apparatus of the intestine. Where the excrement employed was fresh, the disease produced corresponded perfectly to the symptoms of cholera. Where the material introduced had been allowed to stand several days, the symptoms produced were partly those of cholera, and partly those following the introduction of putrid matter.

The conclusions arrived at by Dr. Popoff are:—

1. That cholera may be produced in animals through inoculation by means of cholera-excrementa, the vomited matter, or even of the urine of patients suffering from this disease.

2. That when the excrementa have stood for some time, the symptoms produced are not altogether pathognomonic of cholera, but resemble, in part, the effect produced by the introduction of any putrid animal matter into the economy.

3. That the severity of the symptoms depends in a degree upon the freshness of the excrementa.

4. The infection may take place from the introduction of the *materies morbi* immediately into the blood, i. e. without coming in contact with the intestine.

5. The characteristic symptoms of cholera poisoning in animals are produced, not immediately after the introduction of the poison into the economy, but only after the lapse of a fixed interval, varying from one to three days.

Correspondence.

Oysters and their peculiar Digestive Property.

Messrs. Editors,—Recently, you had a paper from me about pepsin. While trying experiments with it, I was one day requested by one of our most experienced physicians to digest two oysters. I placed them, after thorough washing, with one grain of Sheffer's pepsin, four drops hydrochloric acid, and one ounce of water, in a test tube, and submitted to a temperature of 100° Fah. At the expiration of two hours, almost perfect solution had taken place, only four and a half grains remaining on the filter, and the residue was of a feculent character.

Thinking over this result, and the matter of eating raw oysters, I came to the conclusion that here we have an organized being, with a stomach, &c., calculated to digest infusoria—as its food—and hence possessing a gastric juice; and if so, what should hinder that gastric juice from digesting even the oyster itself, if submitted to the proper condition.

With oysters, as bought by the quart, there is so much liquor. On boiling a little of this liquor it coagulated, indicating so much coagulable albumen. I took another portion, of two drachms of this liquor, one drop hydrochloric acid, and submitted to 100° Fah. for two hours. It remained perfectly clear, and, on boiling a half of it, there was no coagulation, and, applying Fehling's test, there was the beautiful purple color produced, the whole indicating that there was in the liquor a natural element to produce the result. This experiment I have tried repeatedly; and, to make the matter still more conclusive, I placed one ounce of the filtered liquor in a flask, added to it 120 grains of thoroughly washed and wiped, solid part of an oyster, and five drops hydrochloric acid, and submitted to 100° Fah. for seven hours. On filtering, I had only 17 grains of solid matter left, thus showing that 103 grains of the solid oyster had been digested in one ounce of the liquor.

These facts are, I think, extremely interesting, and though my medical brethren have with me, ordered patients, on recovering from exhausting disease, oysters as a part of the diet, and may have done it empirically, it has, after all, been done under strictly chemico-physiological principles, without our knowing it.

Very truly yours,

Lowell, May, 1873. E. H. Hoskins.

A Case of Precocious Menstruation.

Messrs. Editors,—There is a little girl, in one of the families where I am called in my practice, now in her sixth year, who, last September, soon after completing her fifth year, complained to her mother of pelvic pain and the usual symptoms of approaching menstruation. She soon had a sanguineous show, which continued for three days and then ceased. The mother of the child called my attention to the fact. I could not account for it, and as the child was in apparent good health, no medication seemed called for. I thought then it was a hæmorrhage from some strain or injury that would not occur again, but it has continued regular once in twenty-eight days ever since. She is not precocious in any other respect, not large of her age; but the usual change in form suited to a young lady fifteen or sixteen years of age, has taken place, so that she looks like a little woman. I learn an aunt of this child became regularly menstrual at six years of age and continued till she was thirty-eight. I have never met with a case of the kind before, and I think such cases must be very rare. I should expect under such circumstances the menopause would commence correspondingly early.

Respectfully yours, R. K. Clark, M.D.

South Hero, Vt., May 13, 1873.

Medical Miscellany.

DR. FARR reports that the proportion of children raised has doubled within a hundred years.

THE Medical Society of New Jersey held its one hundred and seventh annual meeting May 27th and 28th ult.

EXPERIMENTS in Vulpian's laboratory have shown that on melting putrid blood which had been kept frozen for several hours, the vibrios in it were as lively as ever.

INJECTION OF SPIRITS OF WINE INTO ADIPOSE TUMORS.—Dr. Hasse, of Wordhausen, recommends the injection of alcohol into the substance of adipose or lipomatous tumors. He gives one case of a female who had a large fatty tumor reaching from the shoulder to the armpit. He injected alcohol into this at four different sittings, with fifteen days' interval, directing the syringe into different parts of the tumour. In a few days there was some slight inflammation. The tumor became at first firmer, but soon softened and fluctuated at several points. In three weeks an incision was made into the tumour, and the fatty matter could be pressed out in a liquid form. In another case of a man, æt. 40, a similar treatment was adopted with similar result.—*The Medical Press and Circular.*

ALUMNI ASSOCIATION OF THE MASSACHUSETTS COLLEGE OF PHARMACY.—This society, which had its nucleus in the little class which graduated from the Massachusetts College of Pharmacy in 1869, held its annual meeting at the rooms of the College, No. 8 Boylston Street, on the 8th of May. There were present about twenty gentlemen. After disposing of reports from various committees, the following officers were elected for the ensuing year: President, Thos. Doliber; Vice Presidents, J. C. Loud, E. L. Patch; Secretary, C. E. Tappan; Treasurer, C. H. Bassett; Auditor, C. A. Tufts. Executive Board: G. F. H. Markoe, J. S. Talbot, E. S. Kelley and L. D. Drury.

The President gave an interesting account of the labors and progress of the past year, and made some valuable suggestions concerning their efforts in the future. After a congratulatory address by Prof. Babcock, an interesting discussion took place upon the late revision of the United States Pharmacopœia. The establishment of a journal of Pharmacy in Boston was considered, and a good deal of enthusiasm evinced on the subject. The Association has held meetings every month during the past year, which have been attended with great interest. A large number of valuable papers have been read, and elaborate reports of experiments and studies made; among the number an interesting paper on the adulteration of milk. Reports of experiments in the manufacture of hydro-bromate of quinia and mono-bromated camphor, detection of impurities in phosphate of iron have been made, while much valuable discussion has taken place.

The annual supper, at the American House, was attended by members and invited guests of the Association, and addresses were made by a number of the participants.—*American Journal of Pharmacy.*

HECTIC FEVER OF PHTHISIS.—The following prescription, known as Heim's pill, and recommended by Niemeyer, has been used with excellent results at Charity Hospital, New York:—

℞ Pulv. digitalis, ʒss.;
Pulv. ipecac.,
Pulv. opii, aa grs. v.
Ext. helenii, q. s. u. f. pil. no. xx.
Consp. pulv. rad. ind. flor. S. One pill three times daily.

THE USE OF CHLORAL AS A TOPICAL APPLICATION FOR BED SORES.—M. Martineau has found that the sloughing of the integuments over bony parts can be treated, if not prevented, by the use of a solution of chloral, 1 in 100 parts of distilled water. He lays this on with a feather and lint, and in a few days the wound heals.—*The Dublin Medical Press and Circular.*

Dr. SMITH has brought out a book in Calcutta, entitled "Fever and Cholera from a new point of view." He puts typhoid fever, yellow fever and cholera under the head of ague, and endeavors to show that the general impression concerning the cause of the Prince of Wales's late fever was all wrong, that it did not come from bad drainage but from malaria. The reviewer in the *British Medical Journal* is disgusted.

DEATH FROM GONORRHŒA.—A case of death from this cause has been recorded by Dr. Villneuve, of Marseilles Hospital. The patient was attacked by intense gonorrhœa, chordee and inflammation. Leeches were applied, and a slough formed, which, on separating, exposed the corpus cavernosum; rigors shortly set in, and pain in the joints of the upper extremities. The patient got an abscess in the elbow, and finally died from bleeding at the eschar wound on the penis. The history of the case indicated acute gonorrhœa, with penile and prostatic phlebitis and pyæmia.

Having seen intense gonorrhœa ending in "penitis," or inflammation of the entire organ, followed by the death of a fine young man, the question suggests itself whether amputation is not necessary and justifiable where no pyæmic symptoms are decidedly evident.—*Dublin Med. Press & Cir.*

NOTES AND QUERIES.

T. F. O., TITUSVILLE, PA.—Our correspondent is referred to a communication by Dr. P. De Marmon, in the New York *Medical Record*, April 1st, 1873, page 164, wherein the properties and composition of sulpho-vinate of sodium are described. The salt is also described in the *Gazette Hebdomadaire*, June, 1870.—EDS.

MARRIED,—In this city, 5th intst., Dr. W. E. Boardman to Miss Mary B. Bryant, both of Boston.

MORTALITY IN MASSACHUSETTS.—*Deaths in seventeen Cities and Towns for the week ending June 7, 1873.*

Boston, 134—Charlestown, 9—Worcester, 11—Milford, 2—Chelsea, 4—Cambridge, 9—Salem, 9—Lawrence, 10—Springfield, 9—Lynn, 15—Fitchburg, 2—Taunton, 4—Newburyport, 6—Somerville, 7—Fall River, 18—Haverhill, 2—Holyoke, 10. Total, 261.

Prevalent Diseases.—Consumption, 40—pneumonia, 22—cerebro-spinal disease, 11—scarlet fever, 9.

Six deaths from smallpox occurred in Holyoke.

GEORGE DERBY, M.D.,
Secretary of the State Board of Health.

DEATHS IN BOSTON for the week ending Saturday, June 14th, 136. Males, 73; females, 63. Abscess, 1—apoplexy, 3—disease of the bladder, 2—disease of the bowels, 2—bronchitis, 3—inflammation of the brain, 1—congestion of the brain, 1—disease of the brain, 6—cyanosis, 1—cancer, 4—cerebro-spinal meningitis, 6—cholera infantum, 1—cholera morbus, 1—consumption, 28—debility, 4—dropsy of the brain, 2—drowned, 1—dysentery, 1—eczema, 1—scarlet fever, 8—typhoid fever, 3—exhaustion, 1—disease of the hip, 1—disease of the heart, 9—homicide, 1—intemperance, 1—disease of the kidneys, 1—disease of the liver, 1—laryngitis, 1—inflammation of the lungs, 6—marasmus, 5—measles, 1—noma, 1—old age, 3—paralysis, 1—pleurisy, 4—premature birth, 3—peritonitis, 1—puerperal disease, 1—rheumatism, 1—scalded, 1—smallpox, 1—disease of the spine, 1—syphilis, 1—teething, 2—tabes mesenterica, 2—whooping cough, 1—unknown, 4.

Under 5 years of age, 42—between 5 and 20 years, 16—between 20 and 40 years, 32—between 40 and 60 years, 24—over 60 years, 22. Born in the United States, 88—Ireland, 30—other places, 18.